REMARKS

In paragraph 3 of the Action, it was requested to add "Prior Art" in Fig. 10. In this respect, annotated sheet and replacement sheet are filed herewith.

In paragraph 4 of the Action, the disclosure was objected to. In view of the objection, the specification has been amended.

In paragraph 5 of the Action, claims 1 and 9 were objected to. In paragraph 7 of the Action, claim 9 was rejected under 35 U.S.C. 112. In paragraph 9 of the Action, claims 1, 2, 5, 7 and 9 were rejected under 35 U.S.C. 103(a) as being unpatentable over Iwakawa in view of Okada et al.

In view of the rejections, claims 1, 2, 5, 7 and 9 have been canceled, and new claims 10-19 have been filed.

A building reinforcing structure of claim 10 comprises first and second structural members for a building connected to each other, a reinforcing member, at least one of a damper member and a first synthetic resin foam, and a second synthetic resin form.

The reinforcing member extends between the first and second structural members and is fixed to the first and second structure members to form a first space surrounded by the first and second structure members connected to each other and the reinforcing member. The reinforcing member includes a first spring member protruding to a direction opposite to a contacting portion between the first and second structural members and a second spring member protruding toward the contacting portion. The first and second spring members form a second space therebetween.

At least one of the damper member and the first synthetic resin foam is provided in the second space between the first and second spring members, and the second synthetic resin foam is provided in the first space enclosed by the first and second structural members and the reinforcing member.

The reinforcing member according to the present invention absorbs a compression stress or extensional stress applied to the structural member (for example, the post and the beam) of the building. Namely, distortion energy accompanied with a compressing force/expanding forces, or oscillation energy when the building oscillates can be effectively absorbed or reduced.

In the reinforcing member of the invention, a damper member (4) and/or a synthetic resin foam (2a) which are disposed in the space between the first spring member and the second spring member cooperate with the first spring member and second spring member when an external force (compressing force/expanding force) is applied to the structural member, or when the building is oscillated. The damper member exerts an excellent interaction effect to absorb and reduce the distortion energy or oscillation energy.

Also, in the reinforcing structure provided with the synthetic resin foam (2b) in the space surrounded by the reinforcing member and the structural members, when the external force (compressing force/expanding force) is applied to the structural member, an excellent interaction effect to absorb and reduce the distortion energy or oscillation energy is obtained with the reinforcing member.

Therefore, according to the present invention, an excellent anti-vibration structure which absorbs sufficient distortion energy accompanied by the compressing force or expanding force applied to the building or the vibration energy accompanied by a great oscillation can be obtained. The present invention can not only control the distortion of the structural member of the building due to compression, expansion or oscillation, but also can provide an excellent interaction effect which can assist a restoring force of the deformation of the structural member, control the oscillation, and restore in a short period of time.

In Iwakawa, a reinforcing fitting has a first fitting (11) which is curved in an L shape and includes a fixing part to the structural member near the curved part at both ends thereof; a reinforcing member (13) which is curved and reinforces a curved base end part (113) by allocating to the curved base end part of the first fitting; and a second fitting (12) including fixing parts fixed with the end parts of the first fitting on both end parts, and a cushion round (123) in the central part.

As shown in Figs. 1 and 4, the reinforcing fitting includes buffer members (2) with rubber elasticity installed at both ends near the curved portion in Figs. 1 and 2 of the first fitting. The L-shaped curved base end part (113) is arranged in the structural member joint portion of the building, the L-shaped fitting extends along the structural member, and the reinforcing member (13) is overlapped in the L-shaped curve part. The second fitting is overlapped with the fixing end part of the first fitting at both end parts, and fixed to each structural member through a tightening hole (114) of a fixing part (121), the tightening hole (114) near the L-shaped curved part of the first fitting, and the tightening hole (132) of the reinforcing member.

Iwakawa and the present invention are attached to structural members of the building to reinforce the structural members of the building.

However, although a space is formed between the first fitting and the second fitting in the reinforcing fitting in Iwakawa, the damper member and/or the synthetic resin foam is not formed in the space, different from the invention.

Therefore, although there is the space between the first fitting and the second fitting in Iwakawa, the structure of the space differs from that of this invention, and the structure and the shape of the reinforcing fitting in Iwakawa completely differs from those of the reinforcing member in this invention. Moreover,

in Iwakawa, there is no explanation that the damper member and/or the synthetic resin foam is provided in the space formed between the first fitting and the second fitting.

Also, in the reinforcing fitting in Iwakawa, the L-shaped curved base end part (113) is located in the structural member joint portion of the building, and fixed thereto along both structural members intersecting the L-shaped fitting. As a result, there is no substantive space (a space with a roughly triangle shape) surrounded by the building structural member and the reinforcing member between the building structural member and the first fitting.

Therefore, in Iwakawa, there is no reinforcing structure which has the synthetic resin foam in the space surrounded by the building structural members and the reinforcing member, as in the reinforcing structure of the invention.

As stated above, the reinforcing fitting in Iwakawa has a completely different structure from the reinforcing member of claim 10, and a different way to attach to the structural members. The reinforcing structure using the reinforcing fitting is completely different from the present invention, so that Iwakawa does not disclose claim 10 of the present invention.

Okada et al. relates to a beam-shaped structural material comprising a glass fiber reinforced material and discloses a beam-shaped structural member. In the beam-shaped structural member, a core material is comprised of an urethane foam filled inside a square-shaped long member of the cross-sectional shape, and an outside is covered by a closed cross sectional structure which is comprised of a glass fiber reinforced material, and both are joined and combined.

Even if Okada et al. discloses the reinforced structural material wherein polyurethane foam is filled, the structural material described in Okada et al. is a completely different member

from the reinforcing member in claim 10 of the invention, and the structure and formation are also completely different from those of claim 10 of the invention, so that the technological problem and technical content are completely different. Okada et al. does not disclose any reinforcing member and reinforcing structure using the reinforcing member of this invention.

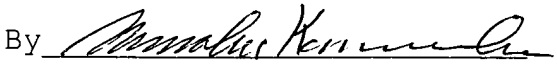
A building reinforcing member of claim 16 comprises a reinforcing member configured to extend between first and second structural members and fix thereto, and a spring. The reinforcing member includes a first spring member protruding to one side thereof and a second spring member protruding to a side opposite to the first spring member to form a space therebetween. The spring is provided in the space between the first and second spring members to urge the first and second spring members away from each other when the space is narrowed.

In Iwakawa, no spring is installed between the first and second fittings 11, 12. Also, Okada et al. only discloses a core member 11a filled with a filling material 12a. Even if Iwakawa and Okada et al. are combined, there is no spring installed between the first and second spring members. Therefore, claim 16 is not obvious from the cited references.

As explained above, the cited references do not disclose or suggest the features of the invention. Even if the cited references are combined, claims of the invention are not obvious from the cited references.

Reconsideration and allowance are earnestly solicited.

Respectfully Submitted,

By 

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annotated sheet

Fig.10

Prior Art